Process lenses as taking lenses for general photography

Many manufacturers have made low distortion apochromatic lenses for process and copy cameras. They were designed for use at magnifications ranging from 1:10 to 10:1, most often from 1:4 to 4:1. In spite of this, some shoot very well at all distances.

The applications for which these lenses were made have gone away so they can often be found at low prices. Thanks to this they can be appealing alternatives to general purpose lenses.

Process lenses are slow. Maximum apertures are no larger than f/8, more often f/9 or f/10, and as small as f/18 at longer focal lengths. They have limited coverage; depending on design and focal length claimed coverages range from as little as around 30° to as much as 64°. The notable exceptions are Schneider's f/11 G-Claron WA lenses, whose claimed coverage is as much as 86°.

G-Clarons' users insist vigorously that these lenses have much larger usable coverage than Schneider claims. Since the largest format I shoot is 6x12 I haven't been able to test these claims. Disputing them on a photography forum is a good way to start a brawl.

Users also claim that Konica Hexanon GR IIs and the lenses sold as Computar and Kowa Graphic have enormous coverages. I have me doubts. Again, expressing doubts about these lenses' coverage will often start unseemly wrangles.

The majority of lenses brought to market after WW-II are coated. Post-war coated process lenses are preferable to uncoated pre-war ones. At today's prices there's no reason to settle for an uncoated process lens.

A small minority of process lenses have cells that are direct fits in shutters. All Schneider G- and Repro-Clarons, some Rodenstock Apo-Ronars and some Boyer Apo-Saphirs.

The others can be expensive to put to use. Adapters – bushings threaded internally and externally -- to hold cells in a standard shutter can be expensive. So can adapters to hold a complete lens in front of a shutter or a shutter in front of a complete lens. This http://web.archive.org/web/*/http://www.skgrimes.com/lens-mounting/table-of-lenses-fitted-to-shutters will give an idea of what might be done with shutters that offer well-timed exposures. When well-timed exposures aren't needed, a large lens can be mounted in front of or behind a Packard shutter. See http://www.packardshutter.com/ for sizes.

Goerz (Apo-Artar), Nikon (symmetrical Apo-Nikkor), and Rodenstock (Apo-Ronar) process lenses are four elements in four groups dialyte type lenses that shoot very well at all distances. Users have given only good reports on them.

Some, possibly all, tessar type process lenses also shoot well at distance. I've got good results at distance with Taylor Hobson Apotals, others report good results with Carl Zeiss Jena Apo-Tessars and asymmetrical type Apo-Nikkors. This is all quite contrary to expectation.

Some, possibly all, wide angle type process lenses, for example Nikon's Process Nikkors and Schneider's f/11 G-Claron WA, are 4/4 double Gauss types. Nikon recommends against using Process Nikkors as general purpose lenses and users' reports on them and WA G-Clarons shot at distance are negative. You have been warned.

Highly respected trade names include Apo-Artar (Goerz and Schneider), Apo-Germinar (Carl Zeiss Jena and Docter), Apo-Nikkor (Nikon), Apo-Ronar (Rodenstock), Apo-Saphir (Boyer), Apo-Tessar (Carl Zeiss Jena), Apotal (Taylor Hobson, also sold as Taylor Hobson and Cooke copying lenses), G-Claron (Schneider), GR II (Konica), and Repro-Claron (Schneider). I'm sure I've left some out. I didn't mention process lenses from the former Soviet Union (Industar 11-M in a wide range of focal lengths, RF-3, -4, -5 and others) because I've seen very few reports on them. It is hard to go wrong with a coated Apo-Artar, an Apo-Germinar, a dialyte type Apo-Nikkor, an Apo-Saphir, an Apotal, a G-Claron or a Repro-Claron as long as the lens has the coverage needed and is in good condition.